New Records of Thirteen Cottoid and Blennioid Fishes for Southeastern Alaska

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ABSTRACT: Three categories of new records for species of fish are reported: (1) extensions of range eastward or southeastward from the Bering Sea or Gulf of Alaska—*Hexagrammos octogrammus* (Pallas), *Artediellus pacificus* Gilbert, *Triglops metopias* Gilbert and Burke, *Anisarchus medius* (Reinhardt), and *Lumpenus fabricii* (Valenciennes); (2) extensions of range northwestward—*Artedius harringtoni* (Starks), *Oligocottus snyderi* Greeley, *Scorpaenichthys marmoratus* (Ayres), and *Liparíscus nanus* Gilbert; and (3) "fill-ins" for species already reported to the north and south of Southeastern Alaska—*Artedius lateralis* (Girard), *Bothragonus swani* (Steindachner), *Chirolophus nugator* (Jordan and Williams), and *Scytalina cerdale* Jordan and Gilbert.

In this paper I bring together distributional data for species that have not previously been recorded from Alaska's southeastern region. The specimens are from the fish collection of the U. S. Bureau of Commercial Fisheries Biological Laboratory, Auke Bay, Alaska, and have been obtained principally from activities of the laboratory and the Bureau's Exploratory Fishing and Gear Research Base at Juneau.

For present purposes, Southeastern Alaska is considered to lie between the latitudes of Skagway to the north and Dixon Entrance to the south (Fig. 1). The region, an archipelago composed of marine fjords, has a roughly rectangular outline and is about 590 km long and 176 km wide.

The new records are of three types: (1) eastward range extensions from the Gulf of Alaska or Bering Sea, (2) northwestward range extensions, primarily from British Columbia but also from as far south as Monterey, California, and (3) records that fill gaps for ranges that have been established northwest and southeast of Southeastern Alaska.

Although charts of Southeastern Alaska depict the marine waters as continuous, four lines of evidence suggest that a partial faunal barrier divides the inside waters into northern and southern regions in the vicinity of Kuiu, Kupreanof, and Mitkof islands (Fig. 1). First, water temperatures are usually lower in the northern waters during all seasons than in the southern inside waters or along the outer coast of Southeastern Alaska. Second, five species of shallow-water fishes whose ranges extend into California—*Squalus acanthias, Artedius harringtoni* (records of Auke Bay Laboratory), *Rachochilus vacca, Embiotoca lateralis,* and *Cymatogaster aggregata* (Tarp, 1952)—have been collected in the inside waters south of the Kuiu-Mitkof region but are absent from collections from the inside waters to the north. Third, north and south of the Kuiu-Mitkof vicinity, waters deeper than 10 meters are continuous only via the outer coast. Communication east of the coast is limited to three shallow channels: Dry Strait, which usually bares at low water; Wrangell Narrows, which shallows to about 8 meters; and Keku Strait (Rocky Pass), which shallows to about 3 meters. Fourth, the net flow of surface waters in Frederick Sound, Chatham Strait, and Sumner Strait probably is seaward most of the year because rainfall in the region of the boundary and in the mountains to the eastward is heavy and occurs during all seasons. The rainfall probably creates a net surface flow away from the barrier area, thereby decreasing the opportunities for shallow-water species to reach the three restricted channels of communication.

The new eastward range extensions suggest

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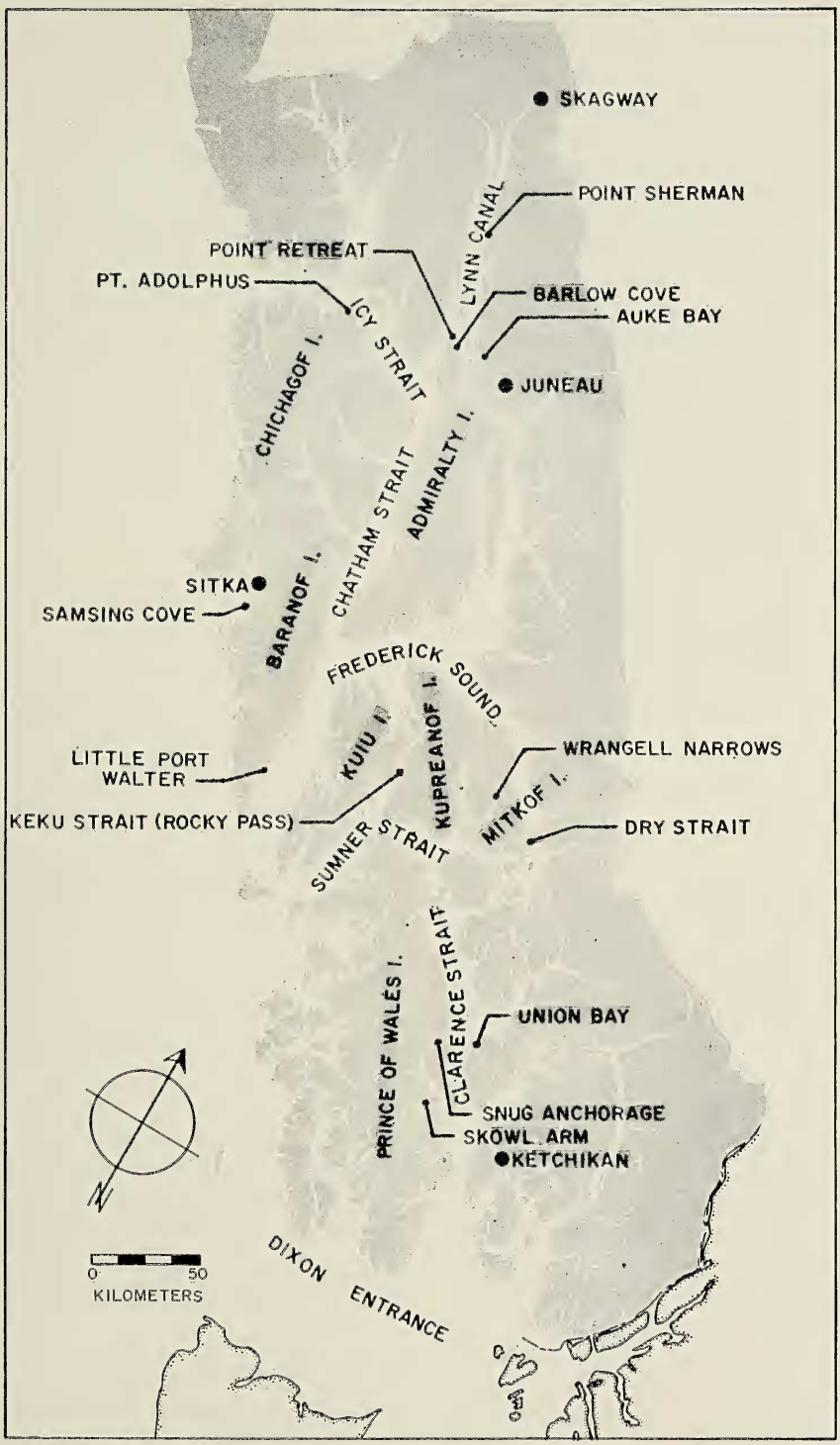

FIG. 1. Map of Southeastern Alaska.

that the northern inside waters of Southeastern Alaska harbor a cold-water enclave of demersal species that has affinities with faunas of the Aleutian Islands, Bering Sea, or regions even farther to the north or west. But any firm conclusion is premature because our collecting methods have not been standardized, numerous critical localities have not been sampled, and available data on distributions are not completely analyzed.

My authorities for species distributions are principally Wilimovsky (1954, 1964), Clemens and Wilby (1961), and Hubbard and Reeder (1965). Although Wilimovsky's "Provisional Keys to the Fishes of Alaska" (1958) is extremely useful for preliminary identifications of the Alaskan fish fauna, the manuscript was given limited distribution and is no longer available (Wilimovsky, personal communication).

Collection numbers for the fish collection of the Auke Bay Laboratory are in the form of two numbers joined by a hyphen and preceded by the letters AB. All lengths are standard.

HEXAGRAMMIDAE

Hexagrammos octogrammus (Pallas)

Two collections: two pelagic-stage juveniles, 43–45 mm, from a salmon trap near Pt. Adolphus, Icy Strait, on 21 June 1955 (AB 55-2); and three specimens, 105–182 mm, taken intertidally by divers using rotenone in the vicinity of Samsing Cove, near Sitka, on 18 March 1964 (AB 64-954).

Wilimovsky (1954) gives the range as the Bering Sea to the Gulf of Alaska, including the Sea of Okhotsk. Quast (1960) gives the range as from northeastern Japan to Yakutat Bay, Alaska. An old record of Bean (1881) gives the locality of "Old Sitka" for "*Hexagrammus* (sic) *ordinatus* (Cope) Bean," a junior synonym of *H. octogrammus* (Quast, 1960).

Evermann and Goldsborough (1907) cite collections of this species made in 1903 from Snug Harbor and Union Bay, Alaska, but the location of these two places is uncertain. The citation suggests the localities of Snug Anchorage and Union Bay, about 65 km northwest of Ketchikan. The fact that both localities in the Ketchikan vicinity are on the cruise track of the U. S. fishery vessel "Albatross" that made collections in 1903 in Southeastern Alaska (deduced from Fassett, 1905) supports the theory that the collections originated near Ketchikan. Correspondence with Robert Kanazawa of the U. S. National Museum discloses, however, that the Snug Harbor specimen originated from the Kodiak Island–Cook Inlet vicinity and that the U. S. National Museum has no specimen of *H. octogrammus* or record of a specimen from a locality named Union Bay. Furthermore, the only locality named Union Bay visited by the "Albatross" on the 1903 cruise was in British Columbia. Very likely, therefore, no collections of this species were made in the Ketchikan vicinity. The southernmost authenticated record is for Sitka.

COTTIDAE

Artediellus pacificus Gilbert

Three collections: one 66-mm specimen taken in a shrimp trawl at 64–75 fathoms (117–137 meters) in the vicinity of the Barren Islands near the mouth of Cook Inlet on 7 August 1963 (AB 64-726); and two collections, 5 and 12 specimens, taken in a shrimp try net over muddy-sand bottom at 50–90 feet (15.2–27.4 meters) in Auke Bay on 25 June 1962 and 27 September 1963 (AB 62-226 and 63-182).

Distribution includes the northern Sea of Japan and Sea of Okhotsk (Schmidt, 1950); the southern Gulf of Anadyr (Andriyashev, 1937); and St. Paul Island (eastern Bering Sea) and Karluk (Kodiak Island) (Jordan and Evermann, 1898). The Auke Bay specimens represent an eastward extension of the range of about 1130 km. Differences in meristic counts between the Auke Bay specimens and those cited by Jordan and Evermann (1898), which are presumably from regions between Kamchatka and Kodiak, do not appear to be important (Table 1).

Artedius harringtoni (Starks)

Numerous collections from Skowl Arm, Prince of Wales Island, taken in shrimp traps fished subtidally; and 56 specimens, 23–80 mm, taken intertidally by divers using rotenone in

TABLE 1

Ranges of Counts for *Artediellus pacificus* from Three Regions of the North Pacific Ocean

Item	Kamchatka to Kodiak[1]	Cook Inlet (AB 64-726)	Auke Bay (AB 62-226, 63-182)
Number of specimens	not given	1	17
First dorsal fin	VII–VIII	VII	VII
Second dorsal fin	12–13	12[2]	11–12[2]
Anal fin	11–12	13[2]	11–12[2]
Pectoral fin	22–24	23[3]	21–24[3]
Lateral line pores	22–26	27[4]	21–28[4]
Caudal fin divided rays	9	damaged	7–9[5]

[1] Jordan and Evermann (1898).
[2] Last two rays counted as two elements.
[3] Counts from both left and right fins.
[4] Left side only.
[5] Counts of seven were found only in the smaller specimens.

the vicinity of Samsing Cove, near Sitka, on 18 March 1964 (AB 64-954).

Distribution includes southern California to northern British Columbia (Clemens and Wilby, 1961) and Kodiak Island (Hubbard and Reeder, 1965). Judging from the distributional data, the species probably is common in the southern half of Southeastern Alaska and along nearly the entire outer coast of the region.

Artedius lateralis (Girard)

Common in our collections from coastal and northern and southern inside localities of Southeastern Alaska, including the southern tip of Baranof Island, Sitka, Barlow Cove, and Skowl Arm.

Clemens and Wilby (1961) give the distribution as southern California to the Queen Charlotte Islands, and Hubbard and Reeder (1965) report the species from Kodiak Island. Hubbard and Reeder also suggest that the name *Artedius delacyi* Hubbs and Schultz applies to the species described as *A. lateralis*. The type description of *A. delacyi* states that the species, based on specimens from Kodiak Island, is very closely related to *A. lateralis* (Hubbs and Schultz, 1941). Comparisons of critical proportions of our specimens from Sitka with those from the type description of *A. delacyi* Hubbs and Schultz also support the argument against the distinctiveness of *A. delacyi* (Table 2). The main distinguishing characteristic of *A. delacyi* in the type description involves thickness of the lips, a feature that probably varies according to the conditions of preservation.

Oligocottus snyderi Greeley

Three specimens, 37–57 mm, taken intertidally by divers using rotenone in the vicinity of Samsing Cove, near Sitka, on 18 March 1964 (AB 64-954).

Distribution of the species according to Clemens and Wilby (1961) is from southern California to the Queen Charlotte Islands. Our collection is the first recorded from Alaska and extends the known range northward about 340 km.

TABLE 2

Critical Proportions of *Artedius delacyi* and *A. lateralis* Presented by Hubbs and Schultz (1941) and of Sitka Specimens of *A. lateralis* from the Auke Bay Laboratory Collection

Species	Number	Upper lip width[1] ÷ least suborbital width	Least width of lips[2] ÷ least suborbital width	Head into standard length
A. delacyi	3	ca. 1.0	ca. 1.0	2.75–2.85
A. lateralis from Sitka	10	0.7–1.0	0.7–1.1	2.52–2.71
A. lateralis	([3])	0.6–0.8	0.6–0.8	2.50–2.80 (usually 2.60–2.70)

[1] Measured sagitally.
[2] Least width of both lips below suborbital.
[3] Not given.

Scorpaenichthys marmoratus (Ayres)

One 93-mm specimen taken intertidally by divers using rotenone in the vicinity of Samsing Cove, near Sitka, on 18 March 1964 (AB 64-954).

According to Clemens and Wilby (1961) the distribution is from southern California to northern British Colombia, and individuals are common in the Queen Charlotte Islands. Our collection is the first recorded from Alaska and extends the known range northward about 340 km.

Triglops metopias Gilbert and Burke

One 119-mm specimen taken in a shrimp try net on a silty-sand bottom at approximately 51 feet (15.5 meters) in Auke Bay, 27 September 1963 (AB 63-182). Wilimovsky (1954) gives the distribution as Bering Sea, and later (1964) reports it from Amchitka Island and the Semisopochnoi Island-Petrel Bank vicinity. The Auke Bay Laboratory also has collections from near the Shumagin Islands.

The Auke Bay specimen resembles those, including the type, described from the Bering Sea by Gilbert and Burke (1912), but has counts that are one or two units, depending on the character, below the ranges cited for rays of the soft dorsal, anal, and pectoral fins and for scutes along the lateral line; it also has 21 dorsal scutes as compared with "26 or 27" in the type. The record for Auke Bay is the first for the species in the eastern Gulf of Alaska and extends the known range eastward about 2900 km.

AGONIDAE

Bothragonus swani (Steindachner)

One 51-mm specimen taken intertidally by divers using rotenone in the vicinity of Samsing Cove, near Sitka, on 18 March 1964 (AB 64-954).

Clemens and Wilby (1961) give the range as California to the Queen Charlotte Islands, and Hubbard and Reeder (1965) report the species from Kodiak Island.

LIPARIDIDAE

Liparicus nanus Gilbert

Four specimens, 26–32 mm, taken in three collections made with an Isaac-Kidd trawl at night at 100 meters in Lynn Canal. Two collections (AB 64-63, AB 64-999) are from near Point Sherman, and one (AB 64-72) is from near Point Retreat.

Gilbert (1915) obtained five specimens, including the type, from Monterey Bay, California. The Lynn Canal collections represent a northward extension of range of about 2600 km.

STICHAEIDAE

Anisarchus medius (Reinhardt)

The species was formerly in the genus *Lumpenus* Reinhardt, but Makushok (1958) places it in *Anisarchus* Gill. The Auke Bay Laboratory has several collections from the Gulf of Alaska and the Aleutian Islands, and one collection of 54 specimens, 59–117 mm, taken in a shrimp trawl at 60–90 fathoms (32.8–49.2 meters) in Auke Bay on 25 June 1962 (AB 62-226).

Wilimovsky (1954) gives the range of the species as "Arctic Alaska-Bering Sea; North Atlantic Ocean"; Andriyashev (1954) states that the species is circumpolar and occurs in the Sea of Okhotsk and the northern Sea of Japan. The Auke Bay collection extends the known range eastward about 1400 km.

Chirolophus nugator (Jordan and Williams)

One 57-mm specimen taken intertidally by divers using rotenone in the vicinity of Samsing Cove, near Sitka, on 18 March 1964 (AB 64-954).

Clemens and Wilby (1961) give the range as from northern California to the Strait of Georgia. Hubbard and Reeder (1965) report the species from Kodiak Island.

Lumpenus fabricii (Valenciennes)

One 215-mm specimen captured by hand on a beach at low tide at Auke Bay on 1 December 1963 (AB 63-234). The Auke Bay Laboratory also has one 255-mm specimen from Kachemak Bay, Cook Inlet (AB 64-738).

Andriyashev (1954) lists the species as amphiboreal and occurring in the Chukchi Sea and the northern Sea of Japan; Wilimovsky (1954) gives the range as "Arctic Alaska-Bering Sea; North Atlantic Ocean."

Scytalina cerdale Jordan and Gilbert

Five specimens, 49–64 mm, taken by hand on a beach at low tide in the vicinity of Little Port Walter on Baranof Island on 13 May 1960 (AB 63-32).

This species has been recorded from the Bering Sea to California (Wilimovsky, 1954), and on Agattu Island in the Aleutian Chain (Wilimovsky, 1964).

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